Science Curricular Resource Adoption Guide

Purpose

This guide provides a replicable, district-agnostic process for reviewing, piloting, and adopting high-quality science instructional materials aligned to NGSS. It is designed to support districts in making transparent, evidence-based decisions grounded in classroom practice, teacher voice, and student learning.

This process intentionally mirrors strong adoption practices commonly used in ELA and Math while honoring the unique instructional shifts required for science (phenomena-based learning, sense-making, and investigation).

Phase 1: Establish Vision, Beliefs, and Non-Negotiables

Before reviewing materials, the district should clearly articulate what it believes about science teaching and learning.

Recommended Actions

- Develop or reaffirm a **Science Vision & Beliefs statement**
- Identify **non-negotiables** for instruction (e.g., phenomena-based, inquiry-driven, student discourse)
- Align beliefs to:
    - NGSS Science & Engineering Practices
    - Crosscutting Concepts
    - Disciplinary Core Ideas

Sample Guiding Questions

- What should science *look and sound like* in classrooms?
- How much instructional time should be devoted to investigation vs. reading?
- What level of teacher support and structure is necessary for fidelity?

Phase 2: Pre-Pilot Exploration

This phase ensures that only high-quality, standards-aligned resources move forward to piloting.

2.1 Initial Review Using NGSS Alignment Tools and EdReports

Purpose: Narrow the field of potential resources using objective, third-party evidence.

Key Actions

- Identify candidate programs (comprehensive or modular)
- Review each resource using:
    - NGSS alignment tools (e.g., EQuIP Rubric for Science)
    - EdReports (when available)
- Focus on *instructional design*, not marketing claims

Look-Fors

- Clear anchoring phenomena driving units
- Coherent learning progressions across grade levels
- Integration of SEPs, CCCs, and DCIs
- Built-in opportunities for sense-making and discourse
- Assessment systems aligned to three-dimensional learning

Suggested Output

- Summary comparison chart
- Color-coded ratings (advance / consider / remove)

2.2 Feedback from External Districts Using Candidate Resources

Purpose: Learn from real-world implementation experiences.

Key Actions

- Identify districts currently using each candidate resource
- Conduct structured interviews or surveys with:
    - Teachers
    - Curriculum leaders
    - Instructional coaches

Guiding Questions

- What supports were necessary in year one?
- What challenges emerged with fidelity?
- How did student engagement and discourse change?
- What professional learning was most critical?

Suggested Output

- External feedback summary
- Noted patterns of success and caution

2.3 Teacher Input from Science PLC Discussions

Purpose: Ground decisions in teacher expertise and classroom realities.

Key Actions

- Provide teachers with access to sample materials
- Facilitate structured PLC discussions focused on instruction
- Use a common discussion protocol or rubric

PLC Focus Areas

- Ease of planning and lesson preparation
- Clarity of teacher guidance
- Student ownership of learning
- Quality of investigations and questioning
- Differentiation and accessibility

Suggested Output

- PLC notes and consensus themes
- Identified strengths and concerns per resource

2.4 Sample Unit and Lesson Reviews

Purpose: Examine how the curriculum performs at the lesson level.

Key Actions

- Select a **common unit or lesson** across grade bands
- Review materials using a Science Lesson Review Tool

Look-Fors

- Phenomenon-driven lesson launch
- Student questioning and modeling opportunities
- Alignment between activities and learning goals
- Embedded formative assessment
- Coherence across lessons within a unit

Suggested Output

- Lesson/unit review rubric scores

- Narrative feedback from reviewers

Phase 3: Pilot Design and Implementation

This phase is designed to test how well each resource functions **in real classrooms, with real students, under real conditions**. The goal is not perfection, but to gather high-quality evidence about instructional impact, usability, and alignment to the district's science vision.

3.1 Resource Selection for Pilot

Purpose: Ensure a manageable, meaningful pilot that allows for comparison without overwhelming staff.

Key Actions

- Select **2–3 high-quality resources** that advanced from Phase 2
- Ensure each resource:
    - Is NGSS-aligned
    - Represents different instructional approaches (e.g., comprehensive vs. modular)
    - Can be reasonably supported during the pilot window

Design Considerations

- Avoid piloting too many resources at once
- Ensure equity of access to materials and digital platforms
- Confirm vendor support availability during the pilot

3.2 Pilot Scope and Structure

Purpose: Create consistency across classrooms while respecting grade-band differences.

Key Actions

- Define the **pilot window** (typically 6–12 weeks)
- Identify **common pilot units** by grade band
- Ensure all pilot teachers teach the *same unit* for each resource

Recommended Structure

- K–2: One phenomena-based unit focused on observation, questioning, and modeling
- 3–5: One full unit emphasizing investigations, data analysis, and explanation
- 6–8: One unit integrating multiple science and engineering practices

Why This Matters

- Supports meaningful comparison
- Reduces variability caused by unit selection
- Allows PLCs to engage in shared reflection

3.3 Pilot Norms and Expectations

Purpose: Protect the integrity of the pilot and the validity of the data collected.

Pilot Norms

1. Have an open mind
2. Ask for help and clarification
3. Use the resource with fidelity — do not modify lessons or skip components
4. Follow pacing and time recommendations as closely as possible
5. Suspend use of supplemental science materials during the pilot

Key Message to Teachers

> "We are evaluating the resource — not individual teaching performance."

3.4 Professional Learning and Teacher Support

Purpose: Ensure teachers are prepared to implement the resource as designed.

Key Actions

- Provide an initial **pilot orientation or training session**
- Focus training on:
    - Instructional philosophy and learning progression
    - Unit structure and lesson flow
    - Assessment and discourse strategies
- Schedule **ongoing support** during the pilot

Support Structures

- Vendor or consultant coaching sessions
- District instructional coach check-ins
- Shared planning time within PLCs

3.5 Collaborative Planning and Observation

Purpose: Build collective understanding and reduce isolation during implementation.

Key Actions

- Provide substitute coverage or release time for:
    - Collaborative unit planning
    - Peer observations
- Establish a **shared observation protocol** aligned to pilot look-fors

Observation Focus Areas

- Student engagement with the phenomenon
- Evidence of sense-making and discourse
- Teacher facilitation moves
- Use of investigations and models

3.6 Ongoing PLC Check-Ins During the Pilot

Purpose: Monitor implementation and surface trends in real time.

PLC Focus Areas (Rotational)

- Quality of phenomena and anchoring questions
- Student questioning and explanation
- Balance of hands-on investigation and literacy
- Assessment coherence and usability
- Differentiation and accessibility

Artifacts for PLCs

- Lesson reflections
- Student work samples
- Observation notes

3.7 Documentation and Evidence Collection

Purpose: Ensure decisions are grounded in evidence, not anecdotes.

Evidence to Collect

- Teacher reflection logs
- PLC notes and summaries
- Observation data
- Student engagement surveys
- Sample assessments and student work

Documentation Guidance

- Focus on trends, not isolated experiences
- Capture both strengths and challenges
- Note supports required for successful implementation

Phase 4: Data Collection and Feedback

Data Sources

- Teacher pilot surveys
- Student engagement surveys
- PLC reflections
- Observation notes
- Assessment artifacts

Key Questions

- Did the resource support sense-making?
- Were teachers able to implement with fidelity?
- Did students engage in authentic scientific practices?

Phase 5: Recommendation and Adoption

- SIP or Curriculum Team synthesizes findings
- Develops recommendation grounded in evidence
- Presents to Curriculum Committee / Board
- Finalizes adoption, training, and rollout plan

Key Design Principles for Any District

- Start with beliefs, not products
- Protect fidelity during pilots
- Center teacher voice and student experience
- Use multiple data sources
- Plan for implementation, not just adoption

This guide is intended to be adapted to district context while maintaining the integrity of a high-quality science adoption process.